Supplemental Guidance for Technical Training Organizational Infrastructure, Responsibilities, and Personnel Qualification

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I. INTRODUCTION

In the Implementation Plan for Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 93-3, the Department of Energy (DOE) committed to conduct a review and analysis of the organizational structure, responsibilities, and position qualification requirements of technical training organizations at selected facilities across the complex. This review was conducted at several defense nuclear facilities in 1993.

The plan also called for development of guidance for field organizations to assess how effectively management and operating (M&O) contractor training organizations provide technical training and implement the intent of the DOE training Orders.

This document provides guidance and information to consider for organizational infrastructure, responsibilities, and personnel qualification requirements for contractor technical training organizations.

In recent years (prior to and following DNFSB Recommendation 93-3) numerous DOE documents have been published that contain guidance relative to training organization infrastructure, responsibilities, and technical training staff training and qualification. The documents include:

- DOE-STD-1070-94,*Guidelines for Evaluation of Nuclear Facility Training Programs*
- DOE-STD-1056-93,*Guide to Good Practices for Line and Training Manager Activities Related to Training*
- DOE-STD-1077-94,*Training Accreditation Standard: Requirements and Guidelines*
- DOE-HDBK-1078-94,*Training Program Handbook: A Systematic Approach to Training*
- DOE-NE-STD-1001-91,*Guide to Good Practices for Training and Qualification of Instructors*.

Much of the guidance in this document is based on information contained in these resources. Research from industry and from current literature has also been factored in to take advantage of the experience of other organizations that have faced similar challenges.

A. Purpose

This guidance was prepared to address commitments 5.6.l and 5.6.2 of the DNFSB Recommendation 93-3 Implementation Plan. Commitment 5.6.1 requires the Department to develop and issue guidance. Commitment 5.6.2 requires DOE field organizations to verify, through self-assessment and oversight reviews, that contractor training organizational units are functioning in a manner consistent with the guidance issued in response to commitment 5.6.1. The guidance contained herein should be considered and used as appropriate to conduct these self-assessments and oversight reviews.

B. Applicability

The Supplemental Guidance for Technical Training Organizational Infrastructure, Responsibilities, and Personnel Qualification applies specifically to M&O organizations at DOE defense nuclear facilities; however, its use is recommended at all DOE nuclear facilities. This guidance should be used in conjunction with DOE-STD-1070-94, *Guidelines for Evaluation of Nuclear Facility Training Programs* (Objectives 1 and 2), and DOE-STD-1056-93,*Guide to Good Practices for Line and Training Manager Activities Related to Training*.

II. ORGANIZATIONAL INFRASTRUCTURE

Organizational infrastructure includes the foundation, framework, or features that characterize an organization. M&O contractor training organizations can effectively develop and deliver technical training only with a strong infrastructure. Adequate facilities, clearly defined work processes, good working relationships with the line organizations, clear training objectives and goals, competent instructors and staff, and an organization that allows responsiveness to customer needs are important to an effective infrastructure. These features characterize the foundation of the training organization and determine its ability to provide products and services to the operating organization effectively and efficiently. Functional organization roles and responsibilities and training organization placement also impact the ability to operate effectively.

Explanations of the key features of a training organizational infrastructure form the basis for guidance in this document. The following sections describe key features related to organization of the training function.

A. Instructions and Procedures for Describing the Key Work Processes

Training organizations should develop procedures or provide written directions to promote consistency in quality, to ensure task repeatability and productivity in the performance of training activities, and to ensure adequate documentation of the training activities. These instructions should define the required work processes, accountabilities, and records generated. Procedures should cover administrative services (including records), training and qualification requirements, application of the systematic approach to training, organization and responsibilities, the sharing of training materials, and other pertinent processes.

B. Use of a Systematic Approach to Training Model to Structure all Phases of Training

DOE has endorsed the systematic approach to training (SAT) model as a standard for structuring the analysis, design, development, implementation, and evaluation phases of technical training. The systematic approach to training has proven beneficial to training organizations to ensure that training needs and requirements are uniformly articulated into training course plans and guides, and that training is consistently delivered and assessed. Its use also promotes high quality trainee testing and evaluation based on job performance needs, and prepares the work force for safe and effective job performance. M&O contractors subject to the requirements of DOE Order 5480.20,

PERSONNEL SELECTION, QUALIFICATION, TRAINING, AND STAFFING REQUIREMENTS AT DOE REACTOR AND NON-REACTOR NUCLEAR FACILITIES, are expected to implement this model.

C. **Structured Communications on Configuration Control, Training Program Curriculum, and Strategic Planning**

An effective configuration control system that includes communications with the training function is essential. Training organizations with structured communication networks can maintain training materials current with changes in facility procedures, equipment, and processes. Organizations can also gain valuable information from regularly scheduled training program review meetings that provide technical input and feedback on the applicability and effectiveness of training programs, courses, and methods. The use of program and curriculum review committees to review and analyze issues such as these has proven beneficial at some facilities. These meetings are effective only when line management assumes primary ownership of the curriculum content and assigns subject matter experts (SMEs) to participate in these exchanges.

The training manager should be a regular participant in the operating organization's strategic planning activities so that the training organization is aware of coming changes or shifts in program emphasis early to plan and provide for future training needs. Additionally, training and retraining is essential in moving the work force toward new technologies and processes and establishing standards of quality and safety that support the changing mission at many DOE facilities.

D. **Facilities, Equipment, and Materials**

Facilities, equipment, and materials are critical considerations that impact the results of training. The training organization should ensure that training provides the highest level of learning in the most efficient manner. This often means abandoning the four walls of the classroom in favor of more specialized instructional laboratory settings (to implement computer-based training, distance learning, simulation, etc.) or other alternatives such as self-paced instruction or on-the-job training (OJT). These alternatives may require specialized equipment, materials and supplies, and dedicated specialized trainers, mentors, and evaluators. Even so, the use of these settings may prove more effective over the long term than the traditional classroom setting.

E. **Administrative Support**

As with any organization, the behind-the-scenes tasks and activities carried out by administrators must support the mission of the organization. Insufficient attention to the administrative groundwork necessary to develop and conduct training can undermine an otherwise well-planned training program. The following are representative of administrative functions which support the training organization's infrastructure.

- Publishing and distributing training announcements, schedules, and course catalogs
- Scheduling facilities and instructors
- Providing support for developing instructional materials and support graphics and providing reproduction services

- Managing and maintaining systems for training records, data bases, and reports
- Controlling procedures for developing, issuing, and maintaining training media
- Processing requests for training, reports, exceptions, and extensions
- Coordinating information exchange and sharing activities
- Tracking trainee and instructor qualifications.

F. Selection, Training, and Qualification of Instructional Staff

Locating, recruiting, and training technically qualified individuals to work in training organizations is often a major challenge to training managers. Some training organizations have successfully located and prepared qualified training personnel by teaming a training professional from the staff with an SME to develop training materials. The practice of rotating SMEs from the operations (or maintenance, etc.) organization to the training organization for a specified time to conduct training has also proven successful.

Occasional and on-the-job trainers provide a key resource to the effectiveness of training. The selection, training, and qualification of the OJT trainers and supervisors who regularly train and indoctrinate new employees should receive close attention by both the training and operating organizations since most training is accomplished by these persons.

Initial and continuing training of instructors continues to be a key component in the success of training programs. Allowing a day or two a month for instructors to spend in the line organization helps keep them current with changing conditions in the facility and helps maintain their credibility.

G. Working Relationships: Line and Training Organizations

A key feature of a successful technical training organization, regardless of how it is organized, is the working relationship its staff has with the line organization staff. The training organization's role is to provide support for the line managers who are ultimately responsible for the training and qualification of line organization personnel. Training managers should attend line managers' staff meetings and meet with them regularly to learn of their needs. These meetings can assist with plans for future training and resolution of curriculum, delivery, attendance, testing, and other training-related issues. Training managers should provide line managers with regular reports of training status and progress, and alert line management of delays or changes in training schedules.

The training organization should also establish and maintain close working relationships with other key groups at the facility or site. Quality control, environmental safety and health (ES&H), maintenance, health physics, and other key organizations within the facility and the corporate structure contain resources that are important to the success of the training function. These relationships should be maintained because, in addition to the resource that these organizations represent, they are also both customers and suppliers.

Some training organizations are successfully teaming their resources to meet the responsibilities associated with increased DOE, Federal, and state regulatory

requirements. Shared tasks under a "lead" activity arrangement based on subject matter allows participating organizations to take the lead role when developing specific training, using support from the other participating organizations. This technique allows participants to benefit from information and product sharing as it relates to training, thus providing consistency and cost effectiveness. Training organizations can also team with local colleges, universities, and labor unions to develop and deliver instruction. However, outsourcing does not include the transfer of responsibility for training quality and content. This responsibility remains with the M&O contractor.

H. Instructional Assessments and Training Program Evaluation

Training and qualification programs require a significant investment in equipment, materials, and personnel resources. Evaluation of a training program's effectiveness in producing competent employees ensures that training is being conducted in a consistent, cost effective, and efficient manner. All training organizations should conduct post-training evaluations. Reasons for training program evaluation include the need to determine if work performance has improved, if program content matches current job needs, and if corrective actions are needed to improve program effectiveness.

The ability to recognize deficiencies within the training program and the speed with which corrective actions can eliminate deficiencies are fundamental to the effectiveness of a mature training unit. Training organizations should routinely seek feedback on the training delivery and content from trainees during the instruction. This feedback provides an important benchmark that measures general satisfaction and agreement with the need for the instruction. Post-training indicators of training effectiveness that are gained from interviews with supervisors and former trainees, from direct observation of the work processes, and from analyses of performance indicators are even more important. Organizations that are seriously assessing training effectiveness want to know whether the training made a difference. When training is effective, change should be evident. In instances where training is not making a difference, decisions must be made about changing the training, discontinuing the training, or other alternatives. DOE-STD-1070-94,*Guidelines for Evaluation of Nuclear Facility Training Programs*, contains objectives and criteria that should be used when evaluating training program effectiveness.

I. Roles and Responsibilities for Carrying Out the Training Function

Clearly defining roles and responsibilities for training-related activities is central to the success of any organization and should be clearly defined in facility policies and procedures. Authority of the training organization must also be clearly defined. Without clear authority, it is often difficult (or impossible) to carry out assigned responsibilities.

Reviews by internal and external oversight groups have repeatedly commented on the unnecessary duplication of effort, poor or indeterminate quality of instruction, and lack of ownership resulting from inadequate control over training roles and responsibilities and a lack of clearly defined authority. Recent experience acquired by the international nuclear power generating community provides a good example of cooperation among training organizations.

The nuclear operations divisions of a major European electricity provider recently formed a management committee to oversee the operations training and maintenance training functions. This coordinated the formulation and implementation of training policy, checks, quality controls, and the overall training budget. These separate but related training organization committee members brought together representatives from the various groups concerned, including the nuclear power plants, the line-management departments from the corporate resource group, the professional training department, and the training centers. This partnership was formed as a result of lessons learned from poorly defined responsibilities and lack of integration of related activities. Significant problems arose from over-centralization originally, which led to inefficient response to customer needs, followed by over-decentralization that resulted in inefficient communication of responsibilities and authority. This utility group is experiencing success in overcoming many of its previous problems utilizing this coordinated approach.

Regardless of the kind of organizational structure operating at a site or facility (centralized, decentralized, matrixed, integrated, etc.), the answers to the questions of WHO, WHAT, WHEN, WHERE, WHY, HOW, and HOW MUCH should be addressed in training policies and procedures. Typical responsibilities for training managers and for line managers are described in DOE-STD-1056-93 *Guide to Good Practices for Line and Training Manager Activities Related to Training*. DOE-STD-1056-93 also provides guidance in answering the questions above.

III. ORGANIZING THE TECHNICAL TRAINING FUNCTION

Organization of training is a strategic issue because it affects so many areas. Organization affects the linkage and communications channels between the training organization and its customers. The ability of the training organization to recruit and support specialized expertise in instructional design and other training and education specialties are affected by the organizational structure. Structure also affects the ability to establish and manage the training processes, the efficient and effective teaming of SMEs with instructional specialists, and the ability to measure and control results.

There is no single training organization structure that is best for all situations. In fact, as conditions evolve in a company, the training structure should evolve to fit the new conditions. Part of the M&O contractors' training strategy should be the periodic review of the effectiveness of the current organizational structure and planned changes as conditions evolve within the organization and/or facility.

The old architects' maxim "form follows function" also applies to the design of training organizations. The organization's form should be determined by its function. The structural design should be driven by the company strategic vision and goals and by the amount of work to be performed and resources to be organized to accomplish the work. Examples of questions that should be addressed when establishing training organization structure include:

- What training responsibilities will be delegated to the training organization(s), and what responsibilities will be retained by line managers?

- To what degree is it appropriate to centralize certain training responsibilities?
- How will the organization support the specialized expertise needed to achieve strategic training goals such as implementing alternative delivery media and addressing the training requirements for emerging and changing technologies?
- How will the organization, structure, and management of the training functions mesh with the overall philosophy of the contractor and the parent organization?
- How will the organization manage control of training results and training costs?
- How will the organization facilitate clear communication between the training unit(s) and their user groups?
- How can expensive duplication of development and implementation of training materials be effectively avoided?
- How can the training function be structured to get the greatest return for the training investment?
- How much of the training program will be based on generic courses and how much will be based on custom-designed courses?
- What structure will best ensure responsiveness to changing user needs?

A. Guidelines to Consider When Organizing the Training Function

1. **Formulate and implement a training policy to support the needs of operations.** The training policy should be based on a broad vision of the employees' training, education, development, and qualification needs, and the skills and experience required to meet those needs. Other policy considerations include, but are not limited to: management's use of training to prepare professionals to meet the challenges of cultural, managerial, organizational, and technological changes; using training to acquire and reinforce skills in safety, environmental concerns, and production costs; and sharing responsibilities and tasks between the corporate structure and the individual sites and facilities.

2. **Create a position for a senior level training manager**. Training organizations should have a training manager who has responsibilities and authorities broad enough to provide leadership, to oversee training across the entire organization, and to represent training issues with senior management. The position should be at the highest management level possible, with proper consideration given to the size of the overall organization.

3. **Size of the training organization.** Training organizations that try to be all things to all people become unwieldy, bureaucratic, and unresponsive to their users. Even in cases where training is centralized there are training functions that are better suited to other organizations (i.e., on-the-job training). Do not try to force all training functions into one large training organization.

   Training organizations should, however, be large enough to support the specialized expertise needed by smaller units. Small units located around the site without specialized support seldom achieve the cohesiveness necessary to support their individual needs. Specialized expertise in functions such as the following may be required to enable individual facilities to accomplish their mission.

   - Performance analysis and training needs analysis
   - Curriculum design and instructional design and development

- Testing, measurement, and evaluation
- Alternative delivery media such as computer-based training
- Video and audio scripting and production.

4. **Centralize the development of common instructional materials.** There is no need for each organization (e.g., operations, maintenance, environmental restoration, etc.) to develop its own basic courseware when the instruction has a common core such as HAZWOPER, Radiation Worker, or Occupational Safety and Health Administration (OSHA) training. It is more efficient and economic to modify core materials to fit the needs of the affected organization than it is to conduct the initial development efforts.

5. **Provide leadership in the areas of instructional methodology, technology, and procedures.** Organizations with multiple training organizations, each espousing different methods, standards, and procedures, have great difficulty sharing curriculum, course materials, and administrative systems. Training organizations should consider having one group or sub-unit charged with instructional methodology and consulting within the organization.

6. **Follow a systematic project plan and process to develop instructional materials.** The planning and use of training resources is a critical element in the success of any training organization. Training material content, level of detail, testing, and evaluation should be consistent across the facility and should be systematically developed. Interrupting development of one course to teach another course can adversely affect development projects, particularly if the people have heavy teaching loads. Training workloads should be adjusted to provide the support needed for the development or revision of courses. Instructors who will teach the courses should be used as technical advisors to the development team to ensure accuracy and relevance, and to accommodate changing priorities.

7. **Strategic planning to prepare for the future.** Strategic long-term planning should be an integral part of the training function. Using training as a quick-fix in correcting problems encountered as a result of poor up-front planning should be avoided.

IV. CENTRALIZATION, DECENTRALIZATION, OR INTEGRATION OF TRAINING

Whether to centralize, decentralize, or integrate the training functions is a major consideration when designing the structure of an organization. American business, industry in general, and DOE M&O contractors specifically, have struggled with this question in recent decades. Industry and contractors continue to search for the right mix of overall direction and local delivery of training.

A. Centralization of Training

Technical training systems are considered centralized when the function is coordinated and/or controlled primarily from a single organization within the company. In training organizations with personnel who need strong, clear direction, or where individual

ownership of the job is minimal, managers find greater quality control with the training function centralized. Centralized training administration is also valuable in circumstances where conformity to standards, uniformity in application, and formal documentation is essential. The following strengths and weaknesses come from the experiences of many corporations and are documented in recent literature on the subject. The relative impact of each of the strengths and weaknesses are obviously a function of the implementing organization.

Strengths

- Consistency in training material and content
- Consistency in the articulation of organizational values
- Economy of scale
- Improved consistency in instructional design and presentation methods
- A common structure for sharing and exchanging information

Weaknesses

- Loss of local autonomy, control, and ownership of training programs
- Loss of customization of training content
- Decisions may be made at the least effective decision-making level
- Difficult to change and adapt to new needs
- Can inhibit initiative and personal responsibility

Centralized control over technical training may not be appropriate for all organizations. In some cases, strong centralization of the training function has led to an over-emphasis on the form and structure of training design and development, which did not add sufficient value and increased the cost of training unnecessarily. Over-centralization of training has also resulted in reduction of facility line management involvement with formulating and conducting training programs and with follow-up actions. In some cases, training has been designed around guidelines, typical scenarios, and catalogs rather than around the changing needs of individuals or technologies. Sacrificing training content and needs (function) to administration and structure (form) and losing line management ownership and participation in training are pitfalls of centralization that must be guarded against.

B. **Decentralization of Training**

Technical training systems are considered decentralized when control over training functions is delegated to a local organizational level and there is no common point of coordination among separate facilities or training entities within the larger organization. Decentralized training organizations are autonomous organizations within divisions of the company that organize and implement their own programs and conduct their own evaluations. A decentralized structure generally works well in an organization which produces a diverse array of products or uses several different processing methods or levels of technology. A decentralized structure places technical training closer to line operations and allows training to develop closer relationships with the operations personnel, from whom technical trainers must draw their expertise. The following strengths and weaknesses have been identified through research and experience. As

with anything, these can be either minimized or exacerbated by the implementing organization.

Strengths

- Immediacy and credibility of the training programs
- Greater ownership for training program content and products
- Greater line management involvement
- Training fits cultural and geographic diversity
- Decision-making is closer to the customer
- Local budget control

Weaknesses

- May produce inconsistencies in training program content and materials
- Sharing and exchanging information and training programs are more difficult due to diversity
- Demanding on human and material resources
- Inconsistent (or lower) quality of training
- Inconsistent (or lower) quality of training materials

A decentralized training structure is more susceptible to the influence of local management and can be more difficult to control and monitor. Research shows that a decentralized structure is generally inefficient in organizations where most products or processes are similar within a division or department or among several facilities. It is also more difficult to link technical training to the higher-level mission and strategies of the organization and for corporate management to provide coordination. Decentralization may lead to duplication, and care must be taken to coordinate course development to utilize all developed courses across the organization.

C. Integration of Training

In reality very few, if any, training functions are totally centralized or decentralized. Most organizations' training functions fall somewhere along a continuum between the two extremes. An often quoted maxim in current literature about training structure is "think globally, act locally." Many managers and successful practitioners agree that the general rule of thumb when structuring the training function is to keep curriculum and instructional design and development, and strategic planning for training at the central location and keep delivery of training at the local level. It should be noted that the authority to train an organization's employees may be delegated to another organization, however, the responsibility of maintaining trained employees remains with the line manager. The following issues should be considered when organizational structure is addressed.

D. Key Questions to Answer When Designing the Organizational Structure

Designing the structure within an individual training department or unit should include answering key questions such as:

- What information, sub-functions, and jobs are needed to fulfill the department/unit mission and responsibilities?
- What is the best structure to house these sub-functions and jobs to assure responsiveness to customer needs, quality, and economy?
- What is the internal work and information flow?
- What are the key interfaces outside the training department?
- What are the budget constraints?

The general approach to answering these questions is to:

- Identify information, sub-functions, and jobs needed to fulfill the mission
- Develop alternatives to the organization and management structure
- Identify comparison criteria and weighting factors for each alternative
- Compare alternatives and select one to present to senior management
- Adjust the design depending on senior management feedback.

Placement of the training organization. A review of M&O contractor organizational charts reveals that there are several ways to position technical training within an organization. The most common practices position training in human resources (the personnel department) or integrate it within line organizations. Many contractors use a combination of centralized and decentralized technical training. The centralized portion is in the human resources organization and the decentralized portion is in individual facility line organizations. At some DOE sites, technical training is positioned as an independent function, not directly linked to other company functions such as human resource management.

Cautions in having the technical training function report to human resources include:

- It is too far removed from line operations and its ability to meet operational needs is hampered
- Technical training may be influenced or controlled by people with little or no understanding of it
- Evaluation of outcomes for specific target groups is often difficult
- Providing consistency between various line organization sub-units (operations, maintenance, radiation protection, ES&H, etc.) is difficult
- Frequently the mission of technical training is subordinated to the human resources mission due to inherent conflicts, thereby lessening the effectiveness of the training.

Positioning technical training in the line organization also has its cautions, which include:

- Training can be overshadowed by pressing production needs, operational needs, and/or other demands
- Difficulties in linking training to the larger company operating strategies.

Training organizations positioned as independent functions can also experience problems such as:

- Loss of recognition of the real customers. Isolated from the action, a "we vs they" mentality can readily set in that hinders effectiveness
- A tendency to become bureaucratic, placing form ahead of function. For example, the structure of the lesson plan and the tests take precedence over getting the training on-line.

Positioning technical training within an organization should depend on the mission and the role of training in that mission. Appendix A contains example organizational charts to illustrate positioning of technical training within organizations.

V. RESPONSIBILITIES FOR THE TRAINING OF TECHNICAL PERSONNEL

Training and qualification should be viewed as an integral part of everyone's job. Line and training managers share the responsibility of ensuring that training programs are effective. The *DOE Guide to Good Practice for Line and Training Manager Activities Related to Training* outlines specific training-related responsibilities for line and training managers. The following items are provided to support related areas that are discussed in this guide to good practice.

A. Line Management Responsibilities

- Ensure that all employees assigned to their organization are properly trained in both specific job skills and good practices
- Ensure that the process for documentation and configuration control includes communication with the training organization
- Ensure that work team members keep up-to-date with changing product and manufacturing technologies
- Ensure that training has appropriate authority to meet assigned responsibilities
- Provide specialized plant training as required to include lessons learned
- Participate in site and industry meetings and conferences to ensure that information is transferred regarding training programs
- Use training-related materials developed by DOE as a resource for training programs, including standards, guides to good practices, and handbooks
- Confirm that training replicates actual job conditions to the extent practical and allows for direct participation by the trainees
- Identify weaknesses in performance problems, the root cause(s), and recommend corrective action, with input from the training manager
- Participate in site training advisory committees
- Participate in the development of the training administrative documents
- Periodically review the training and qualification activities by observing training and providing critiques of instruction
- Regularly review training effectiveness, personnel performance in training activities, and response from supervisors.

B. Training Management Responsibilities

- Control personnel, funding, and other training resources
- Monitor current training commitments and track progress
- Assist line management in the elimination of duplicate courses

- Participate in senior management meetings to maintain awareness of plans for expansions, reductions, or other operational changes
- Participate in training workshops and conferences
- Participate in site training advisory committees (if used)
- Maintain current standards of training for all training phases
- Develop and maintain a continuing instructor training program
- Participate in instructional material sharing and joint development activities
- Develop and maintain a continuing training program for managers and supervisors to provide them with skills to manage the workforce effectively
- Ensure that training records are consistently maintained within the organization, are auditable, and are readily available to other managers and the line organization
- Establish controls to track corrective actions
- Ensure that training developed and/or implemented by personnel or organizations other than the operating contractor's staff is monitored and controlled
- Participate in corporate and community educational advisory committees to ensure continued high standards of training.

VI. POSITION QUALIFICATION REQUIREMENTS FOR TECHNICAL TRAINING ORGANIZATIONS

Qualification requirements should be established and documented for contractor and subcontractor training personnel, including occasional trainers and OJT trainers who perform training activities. Requirements should be based on training organization qualification levels and should address instructional competence, technical competence, and interpersonal skills. DOE Order 5480.20, PERSONNEL SELECTION, QUALIFICATION, TRAINING, AND STAFFING REQUIREMENTS AT DOE REACTOR AND NON-REACTOR NUCLEAR FACILITIES, contains the qualification requirements for Training Managers, Training Coordinators, and Training Instructors. However, simply meeting the written requirements of this Order will not ensure that the training staff is adequately qualified to do their jobs.

The training staff must possess the experience, technical knowledge, and instructional skills required to fulfill their assigned duties. Training staff who perform as instructors in the development, presentation, or evaluation of technical topics must possess technical qualifications consistent with their assignments. Technical qualifications should include theoretical and practical knowledge. Work experience at or above the level that is required of the students is desirable. Each facility should establish written procedures that clearly state what the technical qualifications should be, to whom they apply, and how they may be obtained for each instructor qualification level. Technical qualification should be based on pre-established written standards that describe the appropriate level of technical expertise required in specific subject areas. Qualifications should also address job-related knowledge and skills required to complete technical training qualifications.

Appendix A of DOE-NE-1001-91,*Guide to Good Practices for Training and Qualification of Instructors*, contains a Trainer Classification Model. This model shows the training job title categories from Level I to Level VI. Level I considers the subject matter expert as an OJT instructor (trainer). Level VI represents the training manager. This model outlines the relationship between the various training job classifications, representative job descriptions, types of training or training responsibilities associated with each level, and the representative

competencies that individuals should possess for each level or job category within the training organization.

Table 1 in DOE-NE-1001-91 offers a suggested Instructor Technical Qualification review sheet. This sheet identifies the relationship between the subject matter being taught, the audience to whom it is being taught, and the technical qualifications suggested for the instructor. Technical competence of trainers can be verified by reviewing individual operating performance and oral and/or written examinations.

Continuing training is an important aspect of technical trainer qualification. Training that will maintain and develop technical skills and knowledge of job responsibilities should be provided to all personnel who are technical instructors. Instructors who provide facility-specific training should be kept current on facility and industry events and changes. Section 6.2 of the *Guide to Good Practices for Training and Qualification of Instructors* further discusses continuing training of instructors.

Finally, all qualifications of the technical training staff must be documented by the training organization. This includes documentation of the instructional qualifications of occasional trainers from support organizations and from on-the-job trainers who are permanently assigned to the line operating organization.

Achieving the dynamics necessary to meet the challenges imposed by changing requirements and new technologies and to meet day-to-day job responsibilities represent a significant challenge to training organizations. Many of the historical soft approaches to training will no longer work. Evaluation of the impact of the training organization structure and personnel responsibilities are necessary in order to achieve the planned tactical and strategic goals. Training, and the operations which it supports, are changing rapidly. Therefore, training and line management must work together to develop a sound organization. The organization infrastructure must support assigned responsibilities and accommodate established personnel qualification requirements for contractor technical training organizations.

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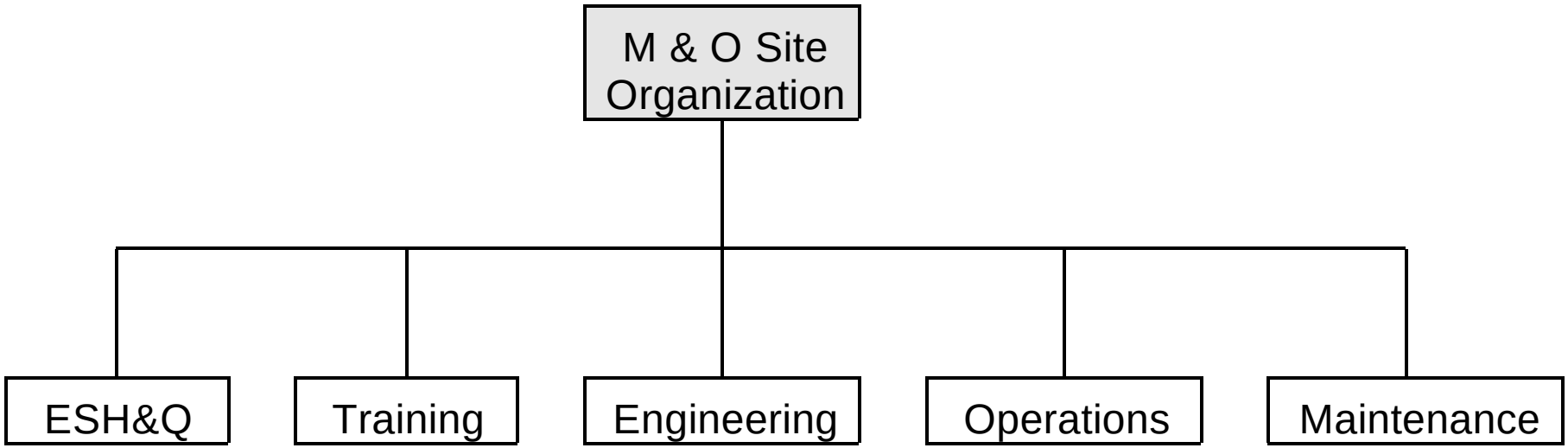
APPENDIX A

Central Training Organization



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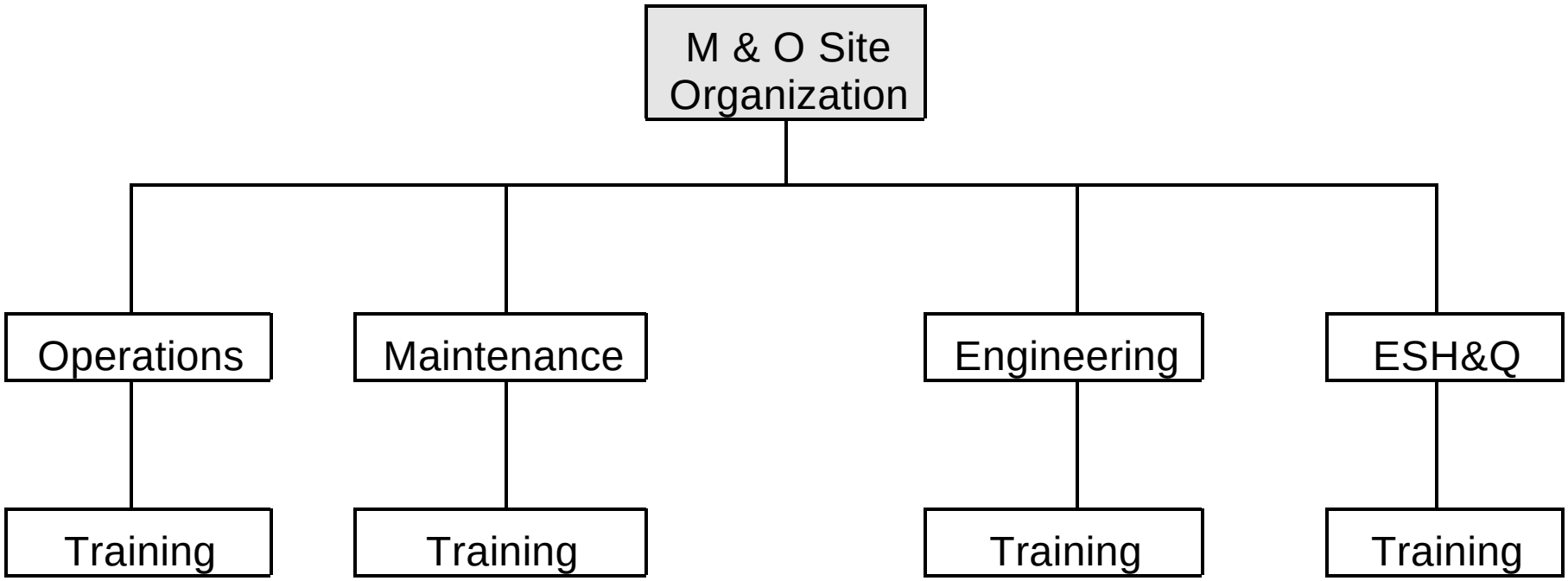
Decentralized Training Organization



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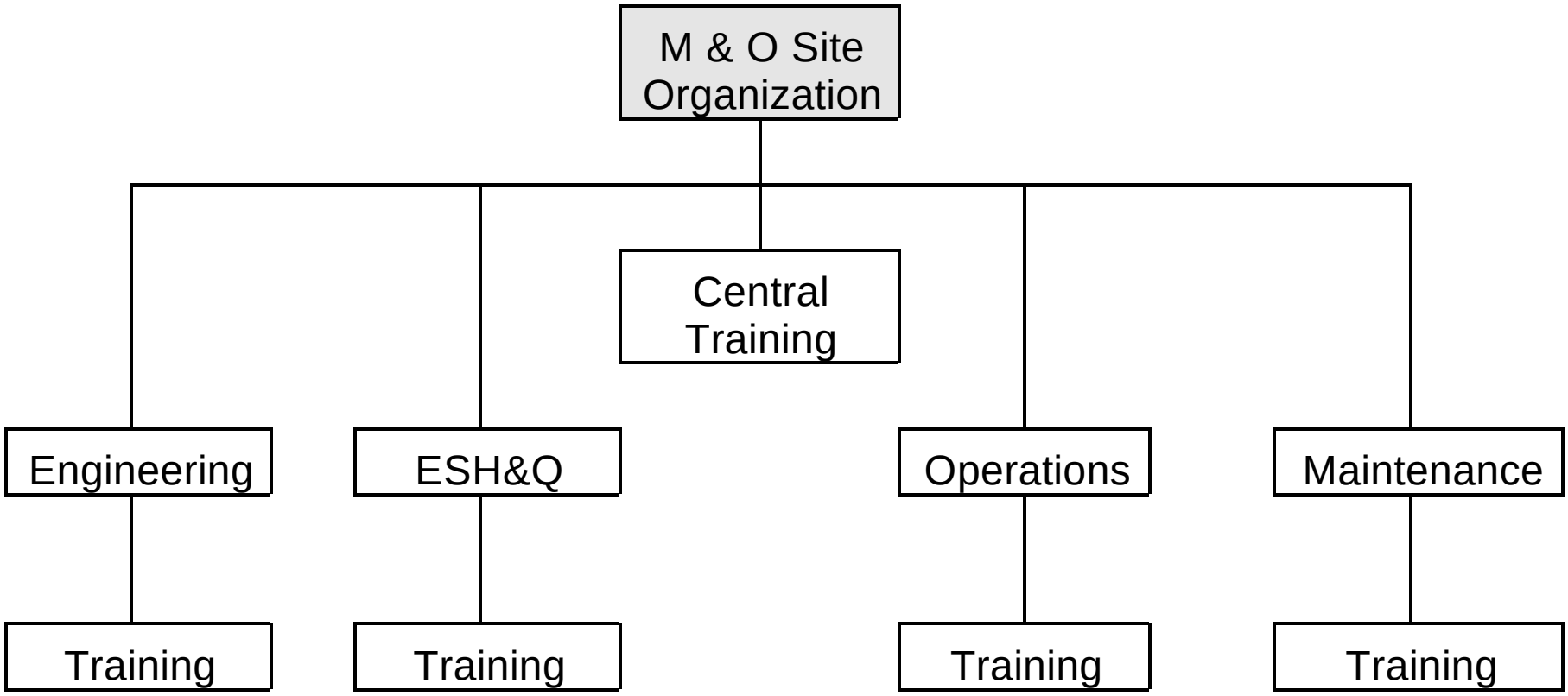
Integrated Training Organization



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